

**ANNUAL REPORT (FISCAL YEAR 2006) AND  
WORKPLAN (FISCAL YEAR 2007) FOR INVENTORIES  
AND  
VITAL SIGNS MONITORING**

**SOUTHERN PLAINS INVENTORY AND MONITORING  
NETWORK**

Includes: Alibates Flint Quarries National Monument, Bent's Old Fort National Historic Site, Capulin Volcano National Monument, Chickasaw National Recreation Area, Fort Union National Monument, Fort Larned National Historic Site, Lake Meredith National Recreation Area, Lyndon B. Johnson National Historical Park, Pecos National Historical Park, Sand Creek Massacre National Historic Site, and Washita Battlefield National Historic Site.

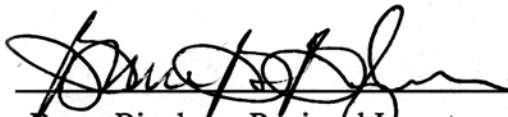
***Southern Plains Network Approval Signatures***



Karren Brown, Superintendent, Lake Meredith National Recreation Area /  
Alibates Flint Quarries National Monument  
2006 Chair, Board of Directors

9/20/06

Date



Bruce Bingham, Regional Inventory and Monitoring Coordinator

10/26/06

Date



Dustin Perkins, Southern Plains Network Coordinator

9/19/06

Date

	<b>Budget program (MS Access, aarwp_budget.mdb)</b>
X	The income amounts entered for Biological Inventories, Vital Signs Monitoring, Prototype \$\$ - Annual Transfer, Water Quality Monitoring and other sources matches the dollar amounts from the memos sent to the regions/networks by WASO (have you used the correct income amounts?).
X	In the Add/Edit Budget Records form, the amount shown for Total Expenses matches that for Total Income. (If it doesn't, enter a record under Expenses in the 7_Other category to make it balance; use an entry such as 'Unexpended funds' or 'Overspent Funds' in the Description column to explain the amount.)
X	For all Expense records, the Description field includes the name of the university, agency, company, or other vendor to help us document our outsourcing efforts. (If this expense involved a contract, cooperative agreement, interagency agreement, or other partnership, is it clear where the money went?)
X	For all Expense records, the correct item from the picklist for 'Where \$\$ Went' has been entered. [Think about who the check was written to; e.g., enter 'Other Non-Federal' for funding that went directly to the private sector, such as for purchases (computers, supplies, etc.), travel (airlines, rental cars, hotels).]
X	On the Status of Biological Inventories form, there is one record for each inventory that is described in the text section of the AARWP or in the budget program. Be sure to list each park that was involved in the particular inventory.
X	Each year's budget has been exported as an .rtf file (one for FY 2006 and one for FY 2007), and both files have been inserted into MS Word at the end of the AARWP document.
X	The file aarwp_budget.mdb has been renamed to include the 4-character network alpha code and the years, as shown in this example: NCCN_FY0607_aarwp.mdb
	<b>Annual Report and Work Plan (MS Word)</b>
X	I have carefully read the guidance for the AARWP and followed it.
X	A header or footer with the date that the aarwp was last revised has been included.
X	I gave special attention to the 'Summary of Major Accomplishments' and 'Public Interest Highlights' sections of the report, following this year's guidance and example. (We need good examples of the successes, applications, and highlights of the program to help us obtain funding for all 32 networks! Your 'Summary of Major Accomplishments' section at the beginning of your annual report is what we'll use for the I&M Program's annual Report to Congress to justify the funding spent by your network.)
X	In the 'Status of Park Vital Signs Monitoring' table, all entries are equal to or greater than the entries in last year's report.
X	Photographs that might be included in one of the reports to Congress, brochures, websites, or other materials that help the program have been submitted by the network. (See the photo database and guidelines for submitting photographs.)
X	The aarwp file has been renamed using the network's 4-character alpha code and the years (FY0607) as in the example NCCN_FY0607_aarwp.doc
X	The annual report has been approved by the appropriate individuals, per my region's procedures. (If you cannot get electronic signatures, it is okay to submit a hard copy with signatures after November 3.)
X	I have followed my region's procedures for submitting the two files (e.g., NCCN_FY0607_aarwp.doc and NCCN_FY0607_aarwp.mdb). (Most regions require you to submit the files through the regional office. The files may be zipped into a zip file if desired, and then submitted to Steven Fancy via either email or ftp).
	<b>Review of FY 2006 Work Plan by WASO</b>
No	[Enter Yes or No]: Has the FY 2007 workplan been approved by the network Board of Directors, and therefore ready for the full WASO review? (If you enter No, the WASO I&M and WRD offices will only briefly review the work plan for 'red flags'.

Southern Plains Inventory and Monitoring Network  
**Summary of Major Accomplishments and Public Interest Highlights**

**Southern Plains Network**

This network of 11 parks includes Alibates Flint Quarries National Monument, Bent's Old Fort National Historic Site, Capulin Volcano National Monument, Chickasaw National Recreation Area, Fort Larned National Historic Site, Fort Union National Monument, Lake Meredith National Recreation Area, Lyndon B. Johnson National Historical Park, Pecos National Historical Park, Sand Creek Massacre National Historic Site, and Washita Battlefield National Historic Site. The network spans the states of Colorado, Kansas, New Mexico, Oklahoma and Texas and has parks in the Intermountain and Midwest Regions. All of the parks except for Sand Creek Massacre National Historic Site have been in the network since its inception and are part of the Natural Resource Challenge 270 park units. Sand Creek Massacre NHS is a recent addition to the National Park Service (NPS) and SOPN. SOPN has not yet been allocated inventory or vital signs monitoring funds for SAND.

The Southern Plains Network made significant progress in biological inventories, vital signs development, and water quality. The network continued progress towards completing vegetation maps at all 11 parks. Progress also continued on filling gaps in the original biological inventories by completing an inventory of fish and plants at BEOL and birds at SAND, continuing a plant inventory at SAND, and initiating a rare species inventory at SAND. The latter two were funded almost entirely with grant money. The two-year process of certifying plants and vertebrates was completed in Fiscal Year 2006 by certifying plant data at FOUN, CAVO, and FOLS. The network completed its Phase II Report three months early which was subsequently approved by Region and WASO. Twenty-nine vital signs were selected for the SOPN long-term monitoring program. Protocol development has begun on bird communities, grassland vegetation, wetland vegetation, soil structure and chemistry, landscape dynamics, fire and fuel dynamics, early detection of exotic plants, core water quality parameters, surface water quantity, and ground water quantity.

**Biological Inventories**

*Network Objectives for Biological Inventories*

- Locate and catalog existing park natural resource documents, data sets, and spatial information and ensure that information is readily available.
- Continue conducting inventories to reach the Servicewide goal of documentation for 90% of the vertebrate animal and vascular plant species within the network parks.
- Continue to evaluate status and identify data gaps within the core set of natural resource inventories for network parks, and conduct investigations of these gaps and species of special concern to network parks.

*NPSpecies Certification at SOPN Parks*

The Southern Plains Network completed plant and vertebrate certification for all of the original ten network parks. This two-year process was completed this fiscal year with the certification of plant inventories at CAVO, FOUN, and FOLS. The eleventh park, SAND is a new park that had no preexisting data. All incoming vertebrate and vascular plant data is now certified as part of the project completion.

*Vegetation Mapping Inventories Underway*

Vegetation mapping was continued at nine SOPN Parks in FY 2006. The work consisted of plot data collection, creating classification keys and vegetation descriptions, completing accuracy assessments, and creating draft vegetation maps. A draft final report was received for LAMR and ALFL. Maps are planned to be complete at FOLS, WABA, LYJO, BEOL, and SAND in Fiscal Year 2007, contingent upon additional funding from the vegetation mapping program. These maps will serve as excellent baselines for SOPN vital signs monitoring programs.

*Eight New Fish and Eighteen New Plants Detected at Bent's Old Fort NHS*

SOPN conducted biological inventories at BEOL in 2001 and 2002. However, SOPN has determined that the original biological inventories did not sufficiently cover the aquatic resources at the park. Filling this gap was a priority because aquatic resources were determined to be instrumental in vital signs monitoring. SOPN developed an interagency agreement with the Bureau of Reclamation to conduct further plant and fish inventories in the park's largest wetland and along the Arkansas River which bisects the park. This project detected 8 new species of fish and 18 new plant species for the park. The invasion of cattail (*Typha latifolia*) and the exotic Canada thistle (*Cirsium arvense*) into the Arch wetland were identified as severe problems that could restrict plant diversity and bulrush habitat.

*Plant Inventory at Sand Creek Massacre National Historic Site*

A plant inventory was continued through a cooperative agreement with Colorado State University. This is SAND's first formal plant inventory. Over 120 species were detected. A final report is due in early Fiscal Year 2007.

*Sand Creek Massacre Bird Inventory Detects 16 Species of Conservation Concern*

SOPN completed the first ever bird inventory at SAND through a cooperative agreement with Rocky Mountain Bird Observatory. This project detected 59 breeding bird species, including 16 that are listed as species of conservation concern by Partners-In-Flight. In addition, the project detected the mountain plover and the burrowing owl, both of which are listed by the state of Colorado. The project detected species that require high grass structure such as Short-eared Owl and Dickcissel, as well as species that prefer low grass structure and burrows provided by the presence of prairie dogs such as Mountain Plover and Burrowing Owl. This suggests a healthy short-grass prairie habitat since this suite of birds is representative of diverse parts of a short-grass mosaic. This mosaic of conditions is hard to find within a given site in the short-grass prairie ecosystem.

*Rare Species Inventory at Sand Creek Massacre Initiated*

SOPN obtained funding from NRPP Small Parks to conduct an inventory of rare species at Sand Creek Massacre NHS. SOPN established a cooperative agreement with Colorado Natural Heritage Program and completed the first of two field seasons in 2006. Two black tailed prairie dog colonies were mapped, and 8 rare birds and 1 rare amphibian species were detected. This project will continue in 2007.

**Vital Signs Monitoring***Network Objectives for Vital Signs Monitoring*

- Hire and retain professional staff and secure office space and facilities that provide a safe, healthy, and productive environment.
- Develop and maintain working and decision-making processes that engages technical staff and managers of network parks.
- Implement and maintain an integrated GIS and data management program.
- Summarize and analyze existing information and concepts important for assessing current and future monitoring efforts and needs in the network parks.
- Identify and prioritize all aquatic indicators (including climatic and atmospheric), including the water quality component of the monitoring plan, and develop protocols and implement programs to monitor the Vital Signs.
- Identify and prioritize all terrestrial indicators (including climatic and atmospheric indicators), and develop protocols that implement programs to monitor Vital Signs.
- Develop and maintain strategies to share information with network parks, scientists, and others interested in the network's I&M program.

*Phase II Report Complete*

The Southern Plains Network completed the second major step of implementing a long-term monitoring program by completing the Phase II Report three months early. SOPN submitted the Phase II report to Region and WASO in June, who then approved the report with some minor editorial comments. These edits were incorporated and the report was finalized in early July. Chapter One is a comprehensive review of the legislation, policy, and guidance relevant to the Inventory and Monitoring Program, the goals for the program, a review of the major network ecosystems, a preliminary list of monitoring objectives, and a summary of existing monitoring within and in the vicinity of network parks. Chapter Two provides descriptions on the background and importance of conceptual models, the major types of models, and the models that were developed for the major ecosystems in the Southern Plains Network. Chapter Three details the process SOPN went through to select the 29 vital signs that will make up the monitoring program. The appendices contain reference information such as natural resource summaries for each park, lists of exotic plants and animals and listed species, GPRA goals pertinent to the Southern Plains Network, network and park maps, a water resources report, an air quality report, scoping summaries from each park, list of GIS datasets, ecosystem workshop reports, prioritized ranking of network natural resources and stressors, and

complete descriptions of the conceptual models. The network has already made progress on several components of the Phase III report that is due in December 2007.

#### *Vital Signs Identified*

The Southern Plains Network selected 29 vital signs that will make up the long-term monitoring program. Of these, 11 were designated core vital signs and will represent vital signs which will receive most of the network resources in the near future. There are also 8 secondary and 10 tertiary vital signs. The network will work on these vital signs if there are opportunities to share costs or if additional funding becomes available. During a prioritization workshop, the network used a collaborative effort of 30 outside experts and representatives from each network park to create a prioritized list of vital signs. The technical committee then met to select the vital signs for the program, using the prioritized list as a guide. This selected list was subsequently presented to the Board of Directors for their review and approval.

#### *Network Vital Signs Webpages Created*

SOPN worked with WASO to create individual internet and intranet webpages for each vital sign. These webpages include a hierarchy of information ranging from a simple bullets-oriented summary that can be printed onto a one page handout, to detailed information about the justification, methods, and analyses that will be used for each vital sign. These webpages will be one of the main avenues for information generated by the network to be distributed to network parks and the general public. The example created by the joint SOPN/ WASO effort was presented at a workshop on integrating vital signs into park management.

#### *SOPN Hosts Grassland Vegetation Monitoring Workshop*

In August, SOPN Ph.D. student Karie Cherwin organized a two-day grassland vegetation monitoring workshop in Fort Collins, Colorado. The workshop was attended by representatives from the Heartlands, Northern Great Plains, and Rocky Mountain networks, the fire effects monitoring program, and Colorado State University. This two day workshop focused on grassland vegetation monitoring plans developed (or currently being developed) by the four Central US I&M Networks. The first day concentrated on the potential for standardizing grassland vegetation sampling methods across networks. Standardized sampling techniques will yield comparable data between networks thereby allowing future analyses to be made on broader geographic scale and between a larger number of National Parks. The second day centered on the logistics of sampling across space and time.

#### *Protocol Development Initiated*

The network continues to move towards monitoring implementation by initiating vital signs protocol development using network staff and partners. The network coordinator is the primary lead on protocols for bird communities, early detection of exotic plants, and human demographics. The network is working cooperatively with Colorado State University on grassland vegetation, wetlands vegetation, soil structure and chemistry, and fire and fuel dynamics protocols; with Texas A&M University on landscape dynamics; and with Texas State University on core water quality parameters, surface water quantity,

and ground water quantity protocols. It is anticipated that a pilot season of field monitoring will take place in the summer of 2007 on some of the following vital signs: grassland vegetation, soil structure and chemistry, bird communities, and early detection of exotic plants.

#### *Urban Influence Index Created*

The SOPN is working with Texas A&M University via a cooperative agreement to develop protocols for landscape dynamics. Two of the major issues threatening the ecological integrity of SOPN parks are 1) land use practices of neighboring lands and 2) encroaching urbanization. Texas A&M is using geo-referenced data on vegetation cover (VC) and urban growth to develop a methodology for representing the influence of urbanization and vegetation succession on changes in landscape structure in and around national parks. The first step is to calculate an urban influence index (UI) for each cell in a grid superimposed on the landscape of interest (LOI). The UI is based on a combination of the distances from cell centers to the centers of all nearby towns, and the town's current and historic population sizes. Then changes in vegetation in the LOI are correlated with changes in UI. One can then assign probabilities of ecological succession (ES) from each vegetation type in the LOI to each other vegetation type, assuming no urban influence. Projected future changes in the LOI can then be predicted under several management scenarios with a spatially-explicit simulation model parameterized based on VC-UI correlations and ES. This methodology could be applicable to any landscape that currently is threatened with urbanization and/or disruption of ecological succession throughout the NPS or elsewhere.

### **Water Quality**

#### *Vital Signs Identified*

The Southern Plains Network selected 29 vital signs that will make up the long-term monitoring program. Of these, 11 were designated core vital signs and will represent vital signs which will receive most of the network resources in the near future. There are also 8 secondary and 10 tertiary vital signs. Aquatic core vital signs included the core water quality parameters plus E. coli, surface water quantity and ground water quantity. A secondary aquatic vital sign is aquatic invertebrates and a tertiary aquatic vital sign is flooding processes. During a prioritization workshop, the network used a collaborative effort of 30 outside experts and representatives from each network park to create a prioritized list of vital signs. The technical committee then met to select the vital signs for the program, using the prioritized list as a guide. This selected list was subsequently presented to the Board of Directors for their review and approval.

#### *Analysis of Historical Water Quality Data Begun*

SOPN is examining temporal trends at selected sites within the network through a cooperative agreement with Texas State University. All relevant historic water-quality data for all SOPN parks are being inventoried and thoroughly reviewed. Texas State University and SOPN will then select a list of sites for which temporal trends can be identified upon completion of this inventory. Temporal trends at the sites will be

analyzed, interpreted, and reported. This information will subsequently serve as the baseline for the network water quality program.

### **Public Interest Highlights**

#### *Urban Influence Index Created*

The SOPN is working with Texas A&M University via a cooperative agreement to develop protocols for landscape dynamics. Two of the major issues threatening the ecological integrity of SOPN parks are 1) land use practices of neighboring lands and 2) encroaching urbanization. Texas A&M developed a new measure of the effects of surrounding populations called the urban influence index. This can then be combined with the vegetation types within a park to predict how these types might change over time. This methodology could be applicable to any landscape that currently is threatened with urbanization and/or disruption of ecological succession throughout the NPS or elsewhere.

#### *Eight New Fish and Eighteen New Plants Detected at Bent's Old Fort NHS*

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#### *Sand Creek Massacre Bird Inventory Detects 16 Species of Conservation Concern*

SOPN completed the first ever bird inventory at SAND through a cooperative agreement with Rocky Mountain Bird Observatory. This project detected 16 birds that are listed as species of conservation concern by Partners-In-Flight. In addition, the project detected the mountain plover and the burrowing owl, both of which are listed by the state of Colorado. The project detected species that require high grass structure such as Short-eared Owl and Dickcissel, as well as species that prefer low grass structure and burrows provided by the presence of prairie dogs such as Mountain Plover and Burrowing Owl. This suggests a healthy short-grass prairie habitat since this suite of birds is representative of diverse parts of a short-grass mosaic. This mosaic of conditions is hard to find within a given site in the short-grass prairie ecosystem.

## **I. Overview and Objectives**

The Southern Plains Inventory and Monitoring Network (SOPN) includes eleven national parks with significant natural resources in five states, including: Colorado, Kansas, New Mexico, Oklahoma, and Texas. Ten of these parks have been in the network since its inception and are part of the Natural Resource Challenge 270 park units. An eleventh



park, Sand Creek Massacre NHS (SAND), (for complete list of park abbreviations see Table 1) is a recent addition to the National Park Service (NPS) and SOPN. SOPN has not yet been allocated inventory or vital signs monitoring funds for SAND.

The Southern Plains Network made significant progress in biological inventories, vital signs development, and water quality. The network continued progress on inventories by continuing work on vegetation maps at all 11 parks, filling gaps in the original biological inventories, and completing NPSpecies certification. The network completed its Phase II Report three months early and selected twenty-nine vital signs for the SOPN long-term monitoring program. Protocol development has begun on 11 core vital signs that will make up the long-term monitoring program in the near future.

Table 1. List of abbreviations and affiliations for the 11 SOPN parks.

Park Name	State	Region	Abbreviation
Alibates Flint Quarries National Monument	Texas	Intermountain	ALFL
Bent's Old Fort National Historic Site	Colorado	Intermountain	BEOL
Capulin Volcano National Monument	New Mexico	Intermountain	CAVO
Chickasaw National Recreation Area	Oklahoma	Intermountain	CHIC
Fort Larned National Historic Site	Kansas	Midwest	FOLS
Fort Union National Monument	New Mexico	Intermountain	FOUN
Lake Meredith National Recreation Area	Texas	Intermountain	LAMR
Lyndon B. Johnson National Historical Park	Texas	Intermountain	LYJO
Pecos National Historical Park	New Mexico	Intermountain	PECO
Sand Creek Massacre National Historic Site	Colorado	Intermountain	SAND
Washita Battlefield National Historic Site	Oklahoma	Intermountain	WABA

### **SOPN Objectives for Biological Inventories:**

1. Locate and catalog existing park natural resource documents, data sets, and spatial information and ensure that information is readily available.
2. Continue conducting inventories to reach the Servicewide goal of documentation for 90% of the vertebrate animal and vascular plant species within the network parks.
3. Continue to evaluate status and identify data gaps within the core set of natural resource inventories for network parks, and conduct investigations of these gaps and species of special concern to network parks.

### **SOPN Objectives for Vital Signs Monitoring:**

1. Hire and retain professional staff and secure office space and facilities that provide a safe, healthy, and productive environment.
2. Develop and maintain working and decision-making processes that engages technical staff and managers of network parks.

3. Implement and maintain an integrated GIS and data management program.
4. Summarize and analyze existing information and concepts important for assessing current and future monitoring efforts and needs in the network parks.
5. Identify and prioritize all aquatic indicators (including climatic and atmospheric), including the water quality component of the monitoring plan, and develop protocols and implement programs to monitor the Vital Signs.
6. Identify and prioritize all terrestrial indicators (including climatic and atmospheric indicators), and develop protocols that implement programs to monitor Vital Signs.
7. Develop and maintain strategies to share information with network parks, scientists, and others interested in the network's I&M program.

## **II. Accomplishments (Fiscal Year 2006) and Scheduled Activities (Fiscal Year 2007)**

**A. Biological Inventories – SOPN park inventories are listed in two different sections of this report. Inventories pertaining to the original 10 SOPN parks that are part of the Natural Resource Challenge 270 park units are outlined in Objective #2. SAND became a member of the network after SOPN was created, however SOPN has received no inventory funding for this park. SOPN has sought external funding to complete inventories at this park. Inventory activities for this park are listed under Task A3.3.**

**Objective 1 Locate and catalog existing park natural resource documents, data sets, and spatial information and ensure that information is readily available.**

### *Task A1.1- NPSpecies Data Entry*

- FY 2006 Accomplishments: Data entry from inventory reports was entered for new inventories (BEOL wetlands, LYJO plants, LYJO deep water fish, SAND birds, vegetation mapping plot data).
- Scheduled FY 2007 Activities and Products: Complete data entry for new inventory projects (SAND Plants, SAND rare species, SAND birds, SOPN vegetation mapping data).

### *Task A1.2 – NPSpecies Certification*

- FY 2006 Accomplishments: Certified historic plant data sets for FOLS, FOUN, and CAVO. This completed the certification of known historic data sets for SOPN. New inventories were certified when completed, which included BEOL wetlands, LYJO plants, LYJO deep water fish, and vegetation mapping data.
- Scheduled FY 2007 Activities and Products: Certify data for new inventories as reports are completed (SAND plants, SAND rare species, SAND birds, vegetation mapping data).

**Objective 2 Continue conducting inventories to reach the Servicewide goal of documentation for 90% of the vertebrate animal and vascular plant species within the network parks.**

*Task A2.1- Vascular Plant Inventory*

- FY 2006 Accomplishments: No activity.
- Scheduled FY 2007 Activities and Products: No projects planned.

*Task A2.2- Mammal Inventory*

- FY 2006 Accomplishments: No activity.
- Scheduled FY 2007 Activities and Products: No projects planned.

*Task A2.3- Bird Inventory*

Parks involved: WABA.

- FY 2006 Accomplishments: No activity.
- Scheduled FY 2007 Activities and Products: Obtain final report from cooperator at WABA. The WABA report is a park-funded project, but SOPN is assisting with the completion. The WABA project is now more than 30 months overdue.

*Task A2.4- Herptile Inventory*

- FY 2006 Accomplishments: No activity.
- Scheduled FY 2007 Activities and Products: No projects planned.

*Task A2.5- Fish Inventory*

- FY 2006 Accomplishments: No activity.
- Scheduled FY 2007 Activities and Products: No projects planned.

**Objective 3 Continue to evaluate status and identify data gaps within the core set of natural resource inventories for network parks, and conduct investigations of these gaps and species of special concern to network parks.**

*Task A3.1- Collate inventory information from SOPN parks*

- FY 2006 Accomplishments: Re-evaluated and revised inventory needs lists for the original 10 SOPN parks and SAND.
- Scheduled FY 2007 Activities and Products: Re-evaluate SOPN inventory needs list based on data from completed inventories.

*Task A3.2- Fill Inventory Gaps*

- FY 2006 Accomplishments: Completed a three-year Interagency Acquisition Agreement with Bureau of Reclamation for wetland inventory of plants and fish at BEOL. According to park staff this wetland has a high likelihood of being incorporated into the vital signs monitoring program, yet it did not receive enough attention during the initial inventory. Received a grant for \$37,934 to inventory rare species at newly acquired land at PECO. This project will start in FY2008. Submitted a proposal for bat inventories at NM, TX and OK parks to Desert

Southwest CESU. It was not successful; however the Desert Southwest CESU coordinator has said it is at the top of the list for Fiscal Year 2007. This project will likely be a cooperative agreement with Dr. Jennifer Frey at New Mexico State University.

- Scheduled FY 2007 Activities and Products: Continue to pursue bat proposal. Keep aware of opportunities and continue to pursue ways to complete holes in SOPN inventories through partnerships and funding possibilities.

*Task A3.3- Search and plan for SAND inventory funding*

- FY 2006 Accomplishments: This newly-established park has essentially no natural resource information. SOPN decided to only pursue inventories at SAND that were deemed essential in developing a vital signs monitoring program and wait to complete non-essential inventories if and when SOPN is allocated additional inventory funding for this park. SOPN has minimized the use of vital signs money for SAND inventories by seeking alternate sources of funding. SOPN determined that the essential inventories were vascular plants, birds, and rare mammals. SOPN continued collaborating with Colorado State University on vascular plant inventory. This project was funded partially by a grant of \$10,000 from Rocky Mountain Cooperative Ecosystems Studies Unit. SOPN also initiated and completed the first field season for a rare species inventory through a cooperative agreement with Colorado Natural Heritage Program. This project was funded from a grant of \$36,400 from NRPP Small Parks. A final report for a bird inventory was completed by the Rocky Mountain Bird Observatory. This project was funded with end-of-the year funds from FY 2004.
- Scheduled FY 2007 Activities and Products: Complete SAND vascular plant report. Complete second field season for SAND rare species inventory. Continue consulting with Colorado Division of Wildlife and other agencies and non-profits for partnership opportunities for vertebrate inventories.

*Task A3.4 – Vegetation Mapping Inventories*

Parks Involved: ALFL, BEOL, CAVO, CHIC, FOLS, FOUN, LAMR, LYJO, PECO, SAND and WABA

- FY 2006 Accomplishments: SOPN decided that vegetation maps were a high priority, therefore SOPN made the following contributions to this process: allocated \$38,825 to an agreement for vegetation mapping with NatureServe; the network coordinator established and oversaw cooperative and interagency acquisition agreements and data entry; SOPN Student Career Experience Program (SCEP) biotechnician (4 weeks) and data manager (1 week) assisted with field work and individual parks assisted with logistical details and field work. SOPN obtained \$281,916 from the vegetation mapping program. Cooperative agreements were continued with: 1) BRIT (\$44,064) for vegetation plot data collection at CHIC, and accuracy assessments at WABA, LYJO, and San Antonio Mission NHP (SAAN); 2) Natural Heritage New Mexico (\$111,452) for vegetation plot data collection and development of vegetation classification at FOUN, CAVO, and PECO; 3) Colorado Natural Heritage Program (\$11,792) for accuracy assessment at SAND and BEOL; 4) Kansas Natural Heritage Inventory (\$11,600) for accuracy assessment at FOLS; and 5) NatureServe (\$38,825)

for vegetation classification for WABA, LYJO, CHIC and SAAN. Continued interagency acquisition agreement with Bureau of Reclamation (BOR) (\$97,400) for mapping at WABA, FOLS, LYJO, CHIC, and SAAN. The work with SAAN of the Gulf Coast I&M Network was overseen by SOPN at the request of the vegetation mapping program due to the close proximity of the two parks and the use of the same cooperator. SOPN received and commented on a draft final report for LAMR and ALFL, although SOPN staff are not integrally involved in this project.

- Scheduled FY 2007 Activities and Products: Complete data entry, vegetation classification and preliminary mapping at CAVO, PECO, and CHIC. Conduct accuracy assessments at PECO, FOUN, CAVO, and CHIC. Complete final reports for FOLS, BEOL, SAND, LYJO, WABA, and SAAN. All of these activities and products will be subject to the amount of funding allocated to SOPN from the vegetation mapping program.

## **B. Vital Signs Monitoring**

### **Objective 1 Hire and retain professional staff and secure office space and facilities that provide a safe, healthy, and productive environment.**

#### *Task B1.1- Establish network positions and office(s)*

- FY 2006 Accomplishments: Continued a cooperative agreement for a Ph.D. student at Texas A&M University (Dr. Roel Lopez and Dr. Bill Grant for \$68,150). Initiated an agreement for a second Ph.D. student at Colorado State University (Dr. Alan Knapp for \$64,845). Both projects were forward funded in this year to cover Fiscal Years 2006 and 2007. These students are assisting with Vital Signs protocol development. Hired Tomye Folts-Zettner as a Biotechnician under the Student Career Experience Program. Tomye worked full time during the summer before returning to Texas A&M for the final year of her Master's Degree. She will continue to work 20 hours per week for SOPN during the academic year. Network coordinator became adjunct faculty at Texas A&M and is on the graduate committees for the Ph.D. student and the Master's biotechnician student.
- Scheduled FY 2007 Activities and Products: Continue agreements with Texas A&M and Colorado State University for Ph.D. students. Complete staffing plan for monitoring implementation as part of the Phase III Report. Assist in funding a full-time GS-9 writer / copy editor for the networks within the Intermountain Region. SOPN would fund approximately 4 pay periods. Hire seasonals for pilot field seasons for network vital signs.

#### *Task B1.2- Ensure staff receive proper training and are updated with the most recent biological information.*

- FY 2006 Accomplishments: Network coordinator attended national I&M meeting, rangeland monitoring workshop, Livestock and Landscapes workshop, supervisor training, and Integrating Monitoring into Management Workshop. Data manager attended national I&M meeting, I&M Data Manager's Meeting, Toastmasters, and a Franklin-Covey Project Management workshop. Data manager received a grant from Albright Wirth to attend project management courses.

- Scheduled FY 2007 Activities and Products: Attend relevant training and meeting opportunities. Data manager will attend project management courses with a grant from Albright Wirth.

**Objective 2    Develop and maintain working and decision-making processes that engages technical staff and managers of network parks.**

*Task B2.1- Coordinate network activities*

- FY 2006 Accomplishments: Held two Technical Committee meetings and two Board of Directors meetings by phone. Held in-person technical committee and prioritization meeting in Amarillo in January. Held in-person board and selection of vital signs meeting in March at BEOL. Decided not to hold annual in-person meeting in August due to these two meetings. Kept Technical Committee and Board up to date with numerous emails and phone calls. Webpage updated on a regular basis to reflect up-to-date information.
- Scheduled FY 2007 Activities and Products: Hold FY 2007 annual meeting in August, 2007 (tentative). Elect a new chair of the Board. Continue to hold necessary conference calls with Technical Committee and board for relevant SOPN decisions. Continually update webpage.

**Objective 3    Implement and maintain an integrated GIS and data management program.**

*Task B3.1- Ensure efficient and central location for data entry and certification*

- FY 2006 Accomplishments: A Procite database was updated and now contains 590 documents. Certified new inventory data in NPSpecies as it came in. Developed a project tracking database. Natural resource and stressor database expanded for vital signs prioritization meeting. Developed plan for future NPSpecies data entry and revisiting certification. Began work on vital signs data management plan and development of draft standard operating procedures. Began development of a photo database.
- Scheduled FY 2007 Activities and Products: Continue NPSpecies certification for new inventory and monitoring projects. Finish and update photo database. Complete data management plan and standard operating procedures.

*Task B3.2- Gather data, build, and update an integrated GIS program*

- FY 2006 Accomplishments: Continued acquisition and processing of relevant GIS data for network projects. New data acquired includes aerial imagery from the USDA National Agriculture Imagery Program for three network parks (WABA, LYJO, CHIC), soils maps and associated databases from NRCS for all SOPN parks (where available), hydrology data from the National Hydrography Dataset for all network parks, and historical vegetation maps for CHIC. Incorporated updates to existing GIS data. Distributed requested GIS datasets to groups working on SOPN projects. Participated on the IMR SCC GIS project rating panel.
- Scheduled FY 2007 Activities and Products: Continue filling a list of needs by developing, purchasing, or finding spatial data.

**Objective 4 Summarize and analyze existing information and concepts important for assessing current and future monitoring efforts and needs in the network parks.**

*Task B4.1- Summarize and analyze existing information.*

- FY 2006 Accomplishments: Revised in-depth natural resource summaries for each park that were compiled from park and SOPN literature, peer-reviewed articles and personal knowledge of park staff. Completed external peer review and incorporated comments on the Phase II Report. Incorporated comments from WASO on Chapters 1-3 of the Phase I and Phase II Reports. Began examining existing protocols and monitoring programs that are pertinent to the SOPN vital signs.
- Scheduled FY 2007 Activities and Products: Continue examining existing protocols and monitoring programs that are pertinent to the SOPN vital signs.

**Objective 5 Identify and prioritize all terrestrial indicators (including climatic and atmospheric indicators), and develop protocols and implement programs to monitor Vital Signs.**

*Task B5.1- Development and Identification of Vital Signs*

- FY 2006 Accomplishments: Held a prioritization workshop on January 24<sup>th</sup> and 25<sup>th</sup> in Amarillo, TX. Each vital sign was ranked according to management significances, ecological significance and cost of implementation / feasibility criteria. The workshop was attended by park staff and 30 outside experts that were divided into plants and soils, wildlife, aquatic resources, and landscape issues breakout groups. The workshop resulted in a prioritized list of 80 vital signs. Workshop attendees also generated lists of potential partners, existing protocols, and existing monitoring programs for the top ranked vital signs. On January 25<sup>th</sup>, the Technical Committee met to create a draft list of selected vital signs. At this meeting 29 vital signs were selected that represented a comprehensive monitoring program. This list was divided into 11 core, 8 secondary, and 10 tertiary vital signs. The network will first allocate resources to core vital signs, and core vital signs will likely comprise the majority of the monitoring program in the near future. Secondary and tertiary vital signs will be considered for monitoring if additional funding is available, or if there are existing programs that make inclusion of these vital signs cost effective. On March 28, this list of 29 vital signs was presented to and approved by the Board of Directors.
- Scheduled FY 2007 Activities and Products: The vital signs selection process is complete; however there may be additional changes to the core vital signs list if the current level of funding cannot adequately address all of the current core vital signs.

*Task B5.2- Planning for Completion of Monitoring Plan*

- FY 2006 Accomplishments: Comments from the Phase I Report were incorporated into the monitoring plan. Phase II Report was submitted in early June 2006, comments were received and WASO approved the report. Protocol development has begun for exotic plants and landscape dynamics with a cooperative agreement at Texas A&M University. Grassland vegetation, wetland vegetation, and soil structure

and chemistry protocol development has begun through a cooperative agreement with Colorado State University. It is anticipated that fire and fuel dynamics and human demographics will be incorporated into these two projects. Network coordinator has begun development of a bird community protocol. SOPN hosted a grassland vegetation monitoring workshop that was attended by the Heartlands, Northern Great Plains, and Rocky Mountain Networks. The emphasis was on the potential for standardizing grassland vegetation sampling methods across networks. Standardized sampling techniques will yield comparable data between networks thereby allowing future analyses to be made on broader geographic scale.

- Scheduled FY 2007 Activities and Products: Continue work on protocol development for wetland vegetation, grassland vegetation, soil structure and chemistry, landscape dynamics, exotic plants, bird communities, human demographics, and fire and fuel dynamics. Determine early in Fiscal Year if the human demographics and fire and fuel dynamics need their own protocol. There will be pilot field seasons for some of the following protocols: grassland vegetation, soil structure and chemistry, exotic plants, and bird communities. Begin work on process for acquiring climate data from existing stations for all SOPN parks. Make substantial progress on Phase III Report due in December 2007.

**Objective 6 Identify and prioritize all aquatic indicators (including climatic and atmospheric indicators), including the water quality component of the monitoring plan, and develop protocols and implement programs to monitor the Vital Signs.**

*Task B6.1- Development and Identification of Aquatic Vital Signs*

- FY 2006 Accomplishments: Held a prioritization workshop on January 24th and 25th in Amarillo, TX. Each vital sign was ranked according to management significances, ecological significance and cost of implementation / feasibility criteria. The workshop was attended by park staff and 30 outside experts (7 devoted to aquatic resources) that were included a specific workgroup for aquatic resources. The workshop resulted in a prioritized list of 80 vital signs. Workshop attendees also generated lists of potential partners, existing protocols, and existing monitoring programs for the top ranked vital signs. On January 25th, the Technical Committee met to create a draft list of selected vital signs. At this meeting 29 vital signs were selected that represented a comprehensive monitoring program. This list was divided into 11 core, 8 secondary, and 10 tertiary vital signs. This core list includes the core water quality parameters, surface water quantity and ground water quantity. The network will first allocate resources to core vital signs, and these will likely comprise the majority of the monitoring program in the near future. Secondary and tertiary vital signs will be considered for monitoring if additional funding is available, or if there are existing programs that make inclusion of these vital signs cost effective. On March 28, this list of 29 vital signs was presented to and approved by the Board of Directors.
- Scheduled FY 2007 Activities and Products: The vital signs selection process is complete; however there may be additional changes to the core vital signs list if the current level of funding cannot adequately address all of the current core vital signs.



*Task B6.2 - Planning towards Completion of Water Quality Monitoring Plan*

- FY 2006 Accomplishments: Phase I Report was accepted by the Water Resources Division; no changes were needed. Phase II Report was submitted in early June 2006. Protocol development has begun for core water quality parameters, surface water quantity, and ground water quantity through a cooperative agreement with Texas State University (\$18,000 with Dr. Glen Longley). This agreement will include a review of historical data and temporal analyses on selected sites once review has been complete.
- Scheduled FY 2007 Activities and Products: Continue work on protocol development for core water quality parameters, surface water quantity and ground water quantity. All relevant water-quality data for all parks within the SOPN will be inventoried and thoroughly reviewed. Temporal trends at selected water-quality sites will be analyzed, interpreted, and reported. Make substantial progress on Phase III Report that is due in December 2007.

**Objective 7    Develop and maintain strategies to share information with network parks, scientists, and others interested in the network's I&M program.**

*Task B7.1- Develop and maintain relationships with parks, other I&M networks, and research entities.*

- FY 2006 Accomplishments: Attended national meetings and network coordinator attended Intermountain Regional workshop on integrating monitoring into management. SOPN paid for 4 park staff members to attend each of two I&M workshops on integrating monitoring into management. Two additional staff from SOPN parks attended the second workshop with park funds. Webpage has been re-designed to incorporate an intranet and internet for each of the core vital signs. This re-design also included a new intranet inventory webpage. Updated the internet page to use the current I&M webpage template. The webpage was continually updated with new reports and meeting notes. Attended graduate committee meetings for SOPN SCEP biotechnician (Master's) and Texas A&M Ph.D. student. Served as a facilitator for the Chihuahuan Desert Network selection meeting. Attended a planning / brainstorming meeting for an All Taxa Biological Inventory for Texas parks. Awarded a grant (\$248,720) for multi-park prairie restoration project from NRPP disturbed lands. SOPN will assist with the coordination of this effort beginning in Fiscal Year 2008.
- Scheduled FY 2007 Activities and Products: Attend national and regional I&M meetings. Continue to promote SOPN and look for partnerships to increase our funding, effectiveness, and scientific understanding.

*Task B7.2- Subject Expert Identification*

- FY 2006 Accomplishments: Thirty outside subject matter experts attended our prioritization meeting. Three of these experts are now involved in cooperative agreements with SOPN.

- Scheduled FY 2007 Activities and Products: Collaborate with potential experts and monitoring programs to assist with vital signs protocol development. Continue identifying and communicating with subject matter experts in a wide variety of roles.

## Staffing

### Inventory and Monitoring Staff

Bruce Bingham, Intermountain Regional Coordinator	(303) 987-6706
Dusty Perkins, Ph.D., Southern Plains Network Coordinator	(830) 868-7128 x 281
Heidi Sosinski, Southern Plains Network Data Manager	(830) 868-7128 x 282
Tomyeanne Folts-Zettner, SCEP Biotechnician	(512) 925-2406
Karie Cherwin, Colorado State University Ph.D. Student	(303) 898-5703
Tulia DeFex, Texas A&M University Ph.D. Student	(979) 845-5702

### Board of Directors

Karren Brown, 2006 Chair of Board, 2007 Member, (Supt. LAMR/ALFL)	(806) 857-3151
Kevin McMurry, 2006 Member, Sept. – Dec., (Supt., FOLS)	(620) 285-6911
Christopher Moos, Ph.D., 2006, 2007 Member, (Supt., CAVO)	(505) 278-2201 x210
Cindy Ott-Jones, 2007 Member, (Supt. BEOL)	(719) 383-5010
Alden Miller, 2006 Member, (Chief of Resources and Facilities, WABA)	(580) 497-2742 x3
Steve Burrough, 2007 Member, (Chief Resource Mngt., CHIC)	(580) 622-3161 x601
Bruce Bingham, 2006, 2007 Member, (IMR I&M Coordinator)	(303) 987-6706
Dusty Perkins, Ph.D., 2006, 2007 Member, (Network Coordinator)	(830) 868-7128 x281
Gary Willson, Ph.D., ad-hoc 2006 and 2007, (GP-CESU)	(402) 472-5047
Gillian Bowser, Ph.D., ad-hoc 2006 and 2007, (GC-CESU)	(979) 845-9787

### Technical Committee

Alden Miller, 2006 Chair, (Chief Resources + Facilities, WABA)	(580) 497-2742 x3
Steve Burrough, 2007 Chair (Chief Resource Management, CHIC)	(580) 622-3161 x601
Paul Eubank, (Chief of Resource Management, LAMR/ALFL)	(806) 857-0309
Vacant, (Supervisory Park Ranger, FOUN)	(505) 425-8025 x28
Brian Carey, (Chief of Resources and Visitor Protection, LYJO)	(830) 868-7128 x232
Fran Pannebaker, (Chief of Natural Resources, BEOL)	(719) 383-5010 x16
Brian Quigley, (Chief Park Ranger, CAVO)	(505) 278-2201 x230
Felix Revello, (Supervisory Park Ranger, FOLS)	(620) 285-6911
Alexa Roberts, Ph. D. (Superintendent, SAND)	(719) 438-5916
Ted Benson, (Park Ranger, PECO)	(505) 757-2611 x234
Dusty Perkins, (Network Coordinator)	(830) 868-7128 x281

### Contractors/Cooperators

Dr. Gillian Bowser, Gulf Coast CESU – Texas A&M Ph.D. Student, SCEP Biotechnician  
Yvonne Chauvin, Natural Heritage New Mexico – Plant certification  
Dan Cogan, Bureau of Reclamation – Vegetation Mapping

Dr. John Crompton, Texas A&M University – SCEP biotechnician, protocol development  
Jim Drake, NatureServe – Vegetation Mapping  
Dr. Jennifer Frey, New Mexico State University – Bat inventories  
Dr. Bill Grant, Texas A&M University – Ph.D. Student, protocol development  
David Hanni, Rocky Mountain Bird Observatory – SAND bird inventory  
Dr. Kris Johnson, Natural Heritage New Mexico – Plant certification  
Dr. Kelly Kindscher, Kansas Natural Heritage Inventory – Vegetation mapping, plant certification  
Dr. Alan Knapp, Colorado State University – Ph.D. Student, protocol development  
Dr. Glen Longley, Texas State University – Aquatic vital signs protocol development  
Dr. Roel Lopez, Texas A&M University – Ph.D. student, protocol development  
Pat Mangan, Bureau of Reclamation – BEOL wetland inventory  
Dr. Esteban Muldavin, Natural Heritage New Mexico – FOUN, CAVO, PECO vegetation mapping  
Dr. Guy Nesom, Botanical Research Institute of Texas – LAMR/ALFL plant inventories, plant certification  
Dr. Roy Roath, Colorado State University – SAND vegetation inventory  
John Sovell, Colorado Natural Heritage Program – SAND rare species inventory  
Dr. Joe Stevens, Colorado Natural Heritage Program – Vegetation mapping  
Rinda Tisdale-Hein, Bureau of Reclamation – BEOL wetland inventory  
Dr. Roger Sanders, Botanical Research Institute of Texas – vegetation mapping, plant certification  
Dr. Greg Smith, Emporia State University – WABA bird inventories, vertebrate Certification  
Dr. Steve Windhager, Ladybird Johnson Wildflower Center – Vegetation mapping

#### **IV. Reports, Publications and Presentations**

DeFex, T. I, W. E. Grant, R. Lopez, and D. W. Perkins. 2006. Monitoring urbanization and ecological succession to project future landscape changes. Poster at Natural Areas Conference, Flagstaff, AZ, September.

Fenton, K, J. R. Bell, D. Wegner, J. Drake, and S. Mennard. 2006. Lake Meredith National Recreation Area, Alibates Flint Quarries National Monument, Texas, 2004-2006 Vegetation classification and mapping. Bureau of Reclamation, Denver, Colorado. Technical Memorandum 86-68260-07-XX. 66 pp., Draft.

Hanni, D. 2006. Sand Creek Massacre National Historic Site Inventory and Monitoring Final Report, Bird Inventory. Rocky Mountain Bird Observatory. 19pp.

Perkins, D. W., H. Sosinski, K. Cherwin, and T. Folts-Zettner. 2006. Southern Plains Network Vital Signs Monitoring Plan: Phase II. National Park Service, Southern Plains Network, Johnson City, TX, USA. 84 pp. plus appendices.

Tisdale-Hein, R. 2006. Survey of fish and plant species in Arch Wetland and Arkansas River at Bent's Old Fort National Historic Site, Otero County, Colorado. Bureau of Reclamation, Denver, Colorado. 14 pp.

## V. Status of Park Vital Signs Monitoring

<b>Southern Plains Network 2006</b>	Air Quality	Water Quality	Water Quantity	Geologic Resources	Plants	Animals	Landscape Characteristics
<b>Planning and Design</b>							
# parks monitoring w/ NRC funding	0	8	11	11	11	11	11
# parks monitoring w/ other funding	0	0	0	0	0	0	0
<b>Protocols Implemented</b>							
# parks monitoring w/ NRC funding	0	0	0	0	0	0	0
# parks monitoring w/ other funding	1	4	4	0	5	7	0
<b>Analysis/Synthesis Available</b>							
# parks monitoring w/ NRC funding	0	0	0	0	0	0	0
# parks monitoring w/ other funding	1	3	3	0	0	2	0

## **VI. USGS Protocol Development and Monitoring-Related Research Needs**

- *Thresholds on two components of grassland vegetation: exotics, and species richness* – Initial work suggests that the chances for exotic plants to become dominant dramatically increase when an ecosystem has 15% of the species covered by exotic vegetation. A study could also take place examining the historic/acceptable ranges of variability in grassland species richness for the central U.S. Some studies have suggested that as diversity declines, stability of grasslands also decreases. It would be desirable to learn more about thresholds for exotics and species richness for our long-term vegetation monitoring program.

## **VII. Budget Narrative**

### *Fiscal Year 2006*

In FY 2006, SOPN received \$390,400 in vital signs funding. The network used this money to continue cooperative agreements with Texas A&M University and initiate one at Colorado State University for a Ph.D. student at each university. The network also funded a cooperative agreement with NatureServe to support vegetation mapping. The network established contracts to complete NPSpecies certification, develop a logo, and print the Phase I Report. Travel funded by the vital signs account included the prioritization workshop, the presentation of selected vital signs to the board, travel for network and park staff to attend two workshops on integrating monitoring into management, support of vegetation mapping, and training for network staff. Vital signs funding also went towards personnel costs of network staff, administrative arrangements (2.8% of vital signs budget, 1.5% of total SOPN funding) with the host park (LYJO), office supplies, and miscellaneous expenses. The 2006 Intermountain Region assessment was \$2,300.

SOPN received \$29,000 in water quality money in FY 2006. This funded a cooperative agreement with Texas State University to develop aquatic monitoring protocols, travel to the prioritization meeting, travel to the presentation of selected vital signs to the board, and travel for data manager training. The Intermountain Region and Water Resources Division assessment was \$700.

SOPN received \$29,800 through a grant from NRPP Small Park funds. This money was used for a cooperative agreement with Colorado Natural Heritage Program to conduct inventories of rare species at SAND.

SOPN received \$267,500 from the vegetation mapping program in FY2006. This funded cooperative agreements for aspects of vegetation mapping at FOLS with Kansas Natural Heritage Inventory, at SAND and BEOL with Colorado Natural Heritage Program, at FOUN, CAVO, and PECO with Natural Heritage New Mexico, and at CHIC, WABA, LYJO, and SAAN with Botanical Research Institute of Texas. An interagency acquisition agreement was continued with BOR for vegetation mapping at CHIC, FOLS, WABA, LYJO, and SAAN. The work at SAAN (of Gulf Coast I&M Network) was done

at the request of the Vegetation Mapping Program since SAAN wanted to use the same botanist for field work and the same ecologist for classification work as was being used at WABA and LYJO. The Intermountain Region assessment was \$2,700.

Due to a budget error in the Regional Accounting office \$273,700 was placed in the SOPN vegetation mapping account in March 2006. Coincidentally this amount corresponded very closely with SOPN's original vegetation mapping funding request of \$267,500 and an additional vegetation mapping request of \$11,792 minus the Intermountain Region's 1% assessment. Therefore, SOPN spent accordingly. However, only the original amount of \$267,500 was authorized by the vegetation mapping program and the extra amount was added to the SOPN account due to a transposition error in the accounting office. No funding memos on the authorized amount ever reached SOPN. The extra amount was removed on July 12, 2006, without any notification going to SOPN. This reduction was not caught until after the fiscal year ended and has resulted in SOPN overspending by \$6,193.28.

#### *Fiscal Year 2007*

In FY 2007 SOPN anticipates receiving \$390,400 for vital signs. This money will be used to continue funding two Ph.D. students, one at Texas A&M University and one at Colorado State University of Colorado. It will also fund a portion of an agreement with Texas State University for the development of aquatic monitoring protocols. Staffing costs will increase as SOPN plans to hire seasonal field crews for pilot testing of monitoring protocols, and contribute to a writer editor for the networks in the Intermountain Region. SOPN will fund travel to an annual in-person network meeting, training for network staff, and costs for seasonal field staff conducting pilot monitoring. Vital signs will also pay for administrative arrangements (2.8% of vital signs budget, 2.5% of total SOPN funding) with the host park, LYJO, office supplies, and miscellaneous expenses.

SOPN plans on receiving \$29,000 in water quality money in FY 2006. This money will partially fund a cooperative agreement with Texas State University to develop aquatic monitoring protocols.

SOPN will also receive \$4,100 in money from the NRPP Small Park funding source to continue funding a rare vertebrate species inventory at SAND through an agreement with Colorado Natural Heritage Program. SOPN will receive \$5,000 from the Albright Wirth program that will pay for training in project management for the data manager. SOPN also has a tentative agreement to receive approximately \$10,000 from the Desert Southwest CESU to assist in funding a multi-park bat proposal. If this money is received it will be put towards a cooperative agreement with New Mexico State University. SOPN will request approximately \$200,000 from the vegetation mapping program, but at this time does not know what that amount will be allocated.

**VIII. Budget Summary - FY 06 Admin Report and FY 07 Work Plan**  
***Budget Summary - Fiscal Year 2006 Administrative Report***

FY06 Admin Report

Network: 26 Southern Plains

***Category: 1\_Income***

<b><i>Description</i></b>	<b><i>\$ Amount</i></b>	<b><i>\$\$ Source</i></b>	<b><i>Where \$ Went</i></b>	<b><i>Comments</i></b>
Water Quality Monitoring - Base Funds	\$29,000.00	WRD - WQ Monitoring		
NRPP Small Park	\$29,800.00	Park or Regional \$\$		
Vegetation Mapping	\$267,500.00	Veg. Mapping Program		
Vital Signs Monitoring - Base Funds	\$390,400.00	I&M - VS Monitoring		
		\$\$		
<b>Subtotal</b>	<b>\$716,700.00</b>			

***Category: 2\_Personnel***

<b><i>Description</i></b>	<b><i>\$ Amount</i></b>	<b><i>\$\$ Source</i></b>	<b><i>Where \$ Went</i></b>	<b><i>Comments</i></b>
Administrative Support	\$10,995.44	I&M - VS Monitoring	NPS	
		\$\$		
SCEP Biotechnician	\$14,974.39	I&M - VS Monitoring	NPS	
		\$\$		
Network Coordinator	\$74,636.08	I&M - VS Monitoring	NPS	
		\$\$		
Data Manager	\$63,222.20	I&M - VS Monitoring	NPS	
		\$\$		
<b>Subtotal</b>	<b>\$163,828.11</b>			

***Category: 3\_Coop. Agreements***

<b><i>Description</i></b>	<b><i>\$ Amount</i></b>	<b><i>\$\$ Source</i></b>	<b><i>Where \$ Went</i></b>	<b><i>Comments</i></b>
Natural Heritage New Mexico	\$111,452.00	Veg. Mapping Program	University-CESU	
NatureServe	\$38,824.00	I&M - VS Monitoring	Other non-Federal	
		\$\$		
Texas State University	\$18,000.00	WRD - WQ Monitoring	University-CESU	Water Protocols
Texas A&M Ph.D. Student	\$34,075.00	I&M - VS Monitoring	University-CESU	FY2007 Funding
		\$\$		
Bureau of Reclamation	\$97,400.00	Veg. Mapping	Other Federal	

Colorado Natural Heritage Program	\$29,800.00	Park or Regional	University-CESU	
Colorado Natural Heritage Program	\$11,792.00	Veg. Mapping Program	University-CESU	
Texas A&M Ph.D. Student	\$34,075.00	I&M - VS Monitoring	University-CESU	FY2006 Funding
Colorado State Ph.D. Student	\$28,496.00	I&M - VS Monitoring	University-CESU	FY2007 Funding
Colorado State Ph.D. Student	\$36,349.00	I&M - VS Monitoring	University-CESU	FY2006 Funding
Kansas Natural Heritage Inventory	\$11,600.00	Veg. Mapping Program	University-CESU	
Botanical Research Institute of Texas	\$44,064.00	Veg. Mapping Program	Other non-Federal	
<b>Subtotal</b>	<b>\$495,927.00</b>			

**Category: 4\_Contracts**

<b>Description</b>	<b>\$ Amount</b>	<b>\$\$ Source</b>	<b>Where \$ Went</b>	<b>Comments</b>
LAMR/ALFL/LYJO Vertebrate Certification	\$201.29	I&M - VS Monitoring	Other non-Federal	
SOPN Logo	\$404.05	I&M - VS Monitoring	Other non-Federal	
Vital Signs Review Assistance	\$1,002.35	I&M - VS Monitoring	University-CESU	
Texas A&M SCEP Tuition	\$2,214.27	I&M - VS Monitoring	University-CESU	
Printing of Phase I Report	\$1,197.00	I&M - VS Monitoring	Other non-Federal	
FOLS Plant Certification	\$1,601.29	I&M - VS Monitoring	University-CESU	
FOLS Imagery	\$2,196.35	I&M - VS Monitoring	Univ_Non-CESU	
<b>Subtotal</b>	<b>\$8,816.60</b>			

**Category: 5\_Operations/Equipme**

<b>Description</b>	<b>\$ Amount</b>	<b>\$\$ Source</b>	<b>Where \$ Went</b>	<b>Comments</b>
Miscellaneous Costs (conferences, parking, room rental)	\$2,548.14	I&M - VS Monitoring	Other non-Federal	
Office Supplies	\$3,472.44	I&M - VS Monitoring	Other non-Federal	
Vehicle	\$185.03	I&M - VS Monitoring	Other non-Federal	
<b>Subtotal</b>	<b>\$6,205.61</b>			



**Category: 6\_Travel**

<b>Description</b>	<b>\$ Amount</b>	<b>\$\$ Source</b>	<b>Where \$ Went</b>	<b>Comments</b>
Chico Workshop	\$5,554.00	I&M - VS Monitoring	Other non-Federal	
Vital Signs Selection Meeting - BOD	\$3,537.99	\$\$ I&M - VS Monitoring	Other non-Federal	
Prioritization Workshop	\$12,687.58	\$\$ I&M - VS Monitoring	Other non-Federal	
Coordinator Travel	\$550.10	\$\$ I&M - VS Monitoring	Other non-Federal	
Rio Rico Workshop	\$1,870.84	\$\$ I&M - VS Monitoring	Other non-Federal	
Vegetation Mapping Assistance	\$6,950.17	\$\$ I&M - VS Monitoring	Other non-Federal	
Coordinator Training	\$2,091.89	\$\$ I&M - VS Monitoring	Other non-Federal	
Vital Signs Prioritization Meeting	\$4,222.42	WRD - WQ Monitoring	Other non-Federal	
Vital Signs Selection Meeting	\$784.70	WRD - WQ Monitoring	Other non-Federal	
Data Manager Training	\$1,875.27	WRD - WQ Monitoring	Other non-Federal	
National I+M Meeting	\$2,291.00	\$\$ I&M - VS Monitoring	Other non-Federal	
<b>Subtotal</b>	<b>\$42,415.96</b>			

**Category: 7\_Other**

<b>Description</b>	<b>\$ Amount</b>	<b>\$\$ Source</b>	<b>Where \$ Went</b>	<b>Comments</b>
IMR Regional Assessment	\$2,700.00	Veg. Mapping Program	NPS	
IMR Regional Assessment	\$700.00	WRD - WQ Monitoring	NPS	
IMR Regional Assessment	\$2,300.00	\$\$ I&M - VS Monitoring	NPS	
Overspent funds	(\$6,193.28)	\$\$ I&M - VS Monitoring	Other non-Federal	
<b>Subtotal</b>	<b>(\$493.28)</b>			

## Budget Analysis

### Analysis of Expenses by Where \$ Went

<i>Funding Source</i>	<i>Total \$\$</i>	<i>NPS</i>	<i>USGS</i>	<i>Other Federal</i>	<i>Univ.-CESU</i>	<i>Univ_Non-CESU</i>	<i>Other non-Federal</i>
I&M - VS Monitoring	\$382,310	\$166,128			\$137,813	\$2,196	\$76,172
Park or Regional \$\$	\$29,800				\$29,800		
Veg. Mapping Program	\$279,008	\$2,700		\$97,400	\$134,844		\$44,064
WRD - WQ Monitoring	\$25,582	\$700			\$18,000		\$6,882
<b>Totals</b>	<b>\$716,700</b>	<b>\$169,528</b>		<b>\$97,400</b>	<b>\$320,457</b>	<b>\$2,196</b>	<b>\$127,119</b>

### Analysis of Expenses by Category

<i>Funding Source</i>	<i>Total \$\$</i>	<i>Personnel</i>	<i>Coop Agree.</i>	<i>Contracts</i>	<i>Operations/Equip</i>	<i>Travel</i>	<i>Other</i>
I&M - VS Monitoring	\$382,310	\$163,828	\$171,819	\$8,817	\$6,206	\$35,534	(\$3,893)
Park or Regional \$\$	\$29,800		\$29,800				
Veg. Mapping Program	\$279,008		\$276,308				\$2,700
WRD - WQ Monitoring	\$25,582		\$18,000			\$6,882	\$700
<b>Totals</b>	<b>\$716,700</b>	<b>\$163,828</b>	<b>\$495,927</b>	<b>\$8,817</b>	<b>\$6,206</b>	<b>\$42,416</b>	<b>(\$493)</b>

### Expense Totals By Category

<i>Category</i>	<i>SubTotal</i>	<i>Percent</i>
2_Personnel	\$163,828	22.86%
3_Coop. Agreements	\$495,927	69.20%
4_Contracts	\$8,817	1.23%
5_Operations/Equipment	\$6,206	0.87%
6_Travel	\$42,416	5.92%
7_Other	(\$493)	-0.07%
	<b>\$716,700</b>	

## Budget Summary Fiscal Year 2007 Draft Workplan

FY07 Work Plan

Network: 26 Southern Plains

### Category: 1\_Income

<i>Description</i>	<i>\$ Amount</i>	<i>\$\$ Source</i>	<i>Where \$ Went</i>	<i>Comments</i>
Albright Wirth Grant	\$5,000.00	Park or Regional \$\$		
NRPP Small Park	\$6,600.00	Park or Regional \$\$		
Vital Signs Monitoring Base Funds	\$390,700.00	I&M - VS Monitoring \$\$		
Desert Southwest CESU	\$9,635.00	Park or Regional \$\$		
Water Quality Monitoring Base Funds	\$29,000.00	WRD - WQ Monitoring		
<b>Subtotal</b>	<b>\$440,935.00</b>			

### Category: 2\_Personnel

<i>Description</i>	<i>\$ Amount</i>	<i>\$\$ Source</i>	<i>Where \$ Went</i>	<i>Comments</i>
Seasonal Biotechnician GS5, 9 pp	\$11,500.00	I&M - VS Monitoring \$\$	NPS	
LYJO Administrative Costs	\$11,000.00	I&M - VS Monitoring \$\$	NPS	
Museum Technician GS5, 9 pp	\$11,500.00	I&M - VS Monitoring \$\$	NPS	
Network Coordinator, GS12	\$92,000.00	I&M - VS Monitoring \$\$	NPS	
Data Manager, GS11	\$67,000.00	I&M - VS Monitoring \$\$	NPS	
SCEP Biotechnician, GS7	\$37,000.00	I&M - VS Monitoring \$\$	NPS	
Copy Editor, GS9, 4 pp	\$16,000.00	I&M - VS Monitoring \$\$	NPS	
Seasonal Biotechnician, GS5, 9 pp	\$11,500.00	I&M - VS Monitoring \$\$	NPS	
Seasonal Biotechnician, GS5, 9 pp	\$11,500.00	I&M - VS Monitoring \$\$	NPS	
<b>Subtotal</b>	<b>\$269,000.00</b>			

### Category: 3\_Coop. Agreements

<i>Description</i>	<i>\$ Amount</i>	<i>\$\$ Source</i>	<i>Where \$ Went</i>	<i>Comments</i>
Multi-Park Bat Proposal	\$9,635.00	Park or Regional \$\$	University-CESU	

Multi-Park Bat Proposal	\$15,722.00	I&M - VS Monitoring \$\$	University-CESU
Texas State University Water Protocols	\$29,000.00	WRD - WQ Monitoring	University-CESU
Colorado State Ph.D.	\$19,210.00	I&M - VS Monitoring \$\$	University-CESU
Texas A&M Ph.D.	\$34,075.00	I&M - VS Monitoring \$\$	University-CESU
Texas State University Water Protocols	\$8,000.00	I&M - VS Monitoring \$\$	University-CESU
Sand Creek Rare Species	\$6,600.00	Park or Regional \$	University-CESU
<b>Subtotal</b>	<b>\$122,242.00</b>		

**Category: 4\_Contracts**

<b>Description</b>	<b>\$ Amount</b>	<b>\$\$ Source</b>	<b>Where \$ Went</b>	<b>Comments</b>
Printing of Phase II Report	\$1,200.00	I&M - VS Monitoring	Other non-Federal	
<b>Subtotal</b>	<b>\$1,200.00</b>			

**Category: 5\_Operations/Equipme**

<b>Description</b>	<b>\$ Amount</b>	<b>\$\$ Source</b>	<b>Where \$ Went</b>	<b>Comments</b>
Vehicle Costs	\$1,000.00	I&M - VS Monitoring \$\$	Other non-Federal	
Office Supplies	\$4,000.00	I&M - VS Monitoring \$\$	Other non-Federal	
Field Supplies	\$4,000.00	I&M - VS Monitoring \$\$	Other non-Federal	
Uniforms	\$1,200.00	I&M - VS Monitoring \$\$	Other non-Federal	
Miscellaneous Costs	\$3,293.00	I&M - VS Monitoring \$\$	Other non-Federal	
<b>Subtotal</b>	<b>\$13,493.00</b>			

**Category: 6\_Travel**

<b>Description</b>	<b>\$ Amount</b>	<b>\$\$ Source</b>	<b>Where \$ Went</b>	<b>Comments</b>
SOPN Annual Meeting	\$10,000.00	I&M - VS Monitoring \$\$	Other non-Federal	
Training	\$5,000.00	I&M - VS Monitoring \$\$	Other non-Federal	
Albright Wirth Training - Project Management	\$5,000.00	Park or Regional \$	Other non-Federal	
Pilot Field Seasons	\$9,000.00	I&M - VS Monitoring	Other non-Federal	
Regional, National Meetings	\$6,000.00	I&M - VS Monitoring	Other non-Federal	
<b>Subtotal</b>	<b>\$35,000.00</b>			

## Budget Analysis

### Analysis of Expenses by Where \$ Went

<i>Funding Source</i>	<i>Total \$\$</i>	<i>NPS</i>	<i>USGS</i>	<i>Other Federal</i>	<i>Univ.-CESU</i>	<i>Univ_Non-CESU</i>	<i>Other non-Federal</i>
I&M - VS Monitoring \$\$	\$390,700	\$269,000			\$77,007		\$44,693
Park or Regional \$\$	\$21,235				\$16,235		\$5,000
WRD - WQ Monitoring	\$29,000				\$29,000		
<b>Totals</b>	\$440,935	\$269,000			\$122,242		\$49,693

### Analysis of Expenses by Category

<i>Funding Source</i>	<i>Total \$\$</i>	<i>Personnel</i>	<i>Coop Agree.</i>	<i>Contracts</i>	<i>Operations/Equip</i>	<i>Travel</i>	<i>Other</i>
I&M - VS Monitoring \$\$	\$390,700	\$269,000	\$77,007	\$1,200	\$13,493	\$30,000	
Park or Regional \$\$	\$21,235		\$16,235			\$5,000	
WRD - WQ Monitoring	\$29,000		\$29,000				
<b>Totals</b>	\$440,935	\$269,000	\$122,242	\$1,200	\$13,493	\$35,000	

### Expense Totals By Category

<i>Category</i>	<i>SubTotal</i>	<i>Percent</i>
2_Personnel	\$269,000	61.01%
3_Coop. Agreements	\$122,242	27.72%
4_Contracts	\$1,200	0.27%
5_Operations/Equipment	\$13,493	3.06%
6_Travel	\$35,000	7.94%
	\$440,935	